

CS4850 HW9

- Let the random variable X be the number of Hamiltonian circuits in the graph $G(n, p)$. For what value of $p(n)$ does

$$\lim_{n \rightarrow \infty} \mathbb{E}[X]$$

go from zero to infinity? Is this value of $p(n)$ the threshold for the existence of a Hamilton circuit? Explain why or why not.

- Write a paragraph explaining the proof that in $G(n, p)$, there are only small components plus possibly one giant component. You need only give the intuitive ideas involved, and will be graded on how much you demonstrate your understanding of the ideas behind the proof. One paragraph is sufficient.